

**WHAT IS CLAIMED IS:**

1. A process for purifying engine coolant, comprising:
  - a) providing engine coolant to be purified;
  - b) treating said coolant through a reverse osmosis process;
  - c) treating said coolant through a electrolysis deionization process; and
  - d) collecting purified coolant.
2. The process for purifying engine coolant according to claim 1, wherein the purified coolant meets ASTM standards.
3. The process for purifying engine coolant according to claim 1, further comprising filtering said coolant.
- 15 4. The process for purifying engine coolant according to claim 3, further comprising filtering said coolant prior to passing said coolant through said reverse osmosis process.
5. The process for purifying engine coolant according to claim 3, further comprising filtering said coolant by at least two filters positioned in series along a flow path.
- 20 6. The process for purifying engine coolant according to claim 5 wherein the filters in series have decreasing pore size.
7. The process for purifying engine coolant according to claim 1, further comprising subjecting said coolant to dissolved air floatation prior to passing said coolant through said reverse osmosis process.
- 25 8. The process for purifying engine coolant according to claim 1, further comprising removing particulate matter from said coolant by centrifugation.

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9. The process for purifying engine coolant according to claim 8, wherein said centrifugation occurs prior to passing said coolant through said reverse osmosis process.

5 10. The process for purifying engine coolant according to claim 1, further comprising filtering said coolant with semi-permeable nano filtration.

11. The process for purifying engine coolant according to claim 10, wherein said semi-permeable nano filtration occurs prior to passing said coolant through said reverse osmosis process.

10 12. The process for purifying engine coolant according to claim 10, further comprising pressurizing said coolant to a pressure of 350 to 600 psi in performing said semi-permeable nano filtration.

15 13. The process for purifying engine coolant according to claim 1, further comprising pressurizing said coolant to a pressure of 50 to 300 psi prior to passing through said reverse osmosis process.

20 14. The process for purifying engine coolant according to claim 13, further comprising pressurizing said coolant to a pressure of 350 to 600 psi prior to passing through said semi-permeable nano filtration.

15. A process for purifying engine coolant comprising:

- a) providing engine coolant to be purified;
- b) filtering said coolant;
- c) subjecting said coolant to dissolved air floatation;
- d) removing particulate matter from said coolant by centrifugation;
- e) filtering said coolant with semi-permeable nano filtration;
- f) passing said coolant through a reverse osmosis process; and
- 30 g) passing said coolant through electrolysis deionization process.

16. A process for purifying engine coolant, comprising treating said coolant to a reverse osmosis process wherein a purified coolant meets ASTM standards as detailed in FIG. 5.

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17. An apparatus for purifying engine coolant, comprising:

- a) a reverse osmosis separator through which said coolant is passed;
- b) a electrolysis deionizer; and
- c) a purified coolant collector.

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18. The apparatus according to claim 17, further comprising a filter.

19. The apparatus according to claim 18, wherein said filter is positioned along a flow path before said reverse osmosis separator.

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20. The apparatus according to claim 19, further comprising at least two filters positioned in series.

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21. The apparatus according to claim 20, wherein said filters in series have decreasing pore size.

22. The apparatus according to claim 17, further comprising a dissolved air floatation separator through which said coolant is passed prior to passing through said reverse osmosis separator.

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23. The apparatus according to claim 17, further comprising a centrifuge through which said coolant is passed prior to passing through said reverse osmosis separator.

24. The apparatus according to claim 17, further comprising a semi-permeable nano filtration process through which said coolant is passed prior to passing through said reverse osmosis separator.

5       25. The apparatus according to claim 24, further comprising a pressurizer to pressurize said coolant to 350 to 600 psi prior to passing through said semi-permeable nano filtration process.

10      26. The apparatus according to claim 17, further comprising a pressurizer to pressurize said coolant to 50 to 300 psi prior to passing through said semi-permeable reverse osmosis process.

15      27. The apparatus according to claim 26, further comprising a pressurizer to pressurize said coolant to 350 to 600 psi prior to passing through said semi-permeable nano filtration process.